

REMARKS

The Office Action dated December 20, 2004 has been reviewed. Applicant has amended claims 1, 8, 10, 12 and 19. Claims 1-21 are pending.

Claims 10-12 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully thanks the Examiner for the indication of allowable subject matter recited in claims 10-12. Applicant has rewritten claims 10 and 12 in independent form including all of the limitations of the respective base claims and any intervening claims. Claim 11 depends from claim 10. Accordingly, claims 10-12 are in condition for allowance. Withdrawal of the objection to claims 10-12 is requested.

Claims 4-6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully traverses the rejection under 35 U.S.C. § 112, second paragraph. The Office Action alleges that the feature of a liquid fuel outlet in communication with a liquid fuel inlet of the fuel tank, as recited in claims 4-6, is not disclosed. However support for these features is provided at, for example, paragraph 0006 of Applicant's specification as originally filed. Applicant respectfully requests that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1, 2 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,189,516 to Hei Ma. Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hei Ma. Applicant respectfully traverses the rejection under 35 U.S.C. § 102(b), of claims 1, 2 and 7, and the rejection under 35 U.S.C. § 103(a), of claim 3. Applicant has amended claim 1 to particularly point out and distinctly claim Applicant's invention.

Claim 1 recites a vapor fuel generation and management system for an evaporative fuel vapor engine, including a fuel tank adapted to store an evaporative liquid fuel, a carbon canister, and a fuel vaporization unit having a stationary diffuser member that generates vapor fuel. The fuel vaporization unit includes a liquid fuel inlet in communication with a liquid fuel outlet of a fuel tank. The liquid fuel inlet is disposed to flow liquid fuel on the diffuser member. Thus the invention provides, for example, a fuel system for an engine that manages vapor emissions and generates and supplies sufficient vapor fuel to sustain operation of the engine without the need

for a separate conventional liquid fuel supply to the engine cylinders, such as fuel injectors and a fuel rail. Support for these features is provided at, for example, paragraphs 0002-0004 and 0019 of Applicant's specification.

In contrast, Hei Ma is directed to a fuel system for a liquid fuel injected engine having a fuel vapor extraction system. As described at col. 6, ll. 1-21, and illustrated in Fig. 1 of Hei Ma, liquid fuel is supplied from a main fuel tank 20, through a supply pipe 24, to a volatilizing chamber 30 at a portion of the chamber 30 that is below an evaporator 40. A fuel circulation pump 32 supplies liquid fuel into a fuel rail 34 from which fuel is dispensed to the individual cylinders of the engine by fuel injectors 18. Surplus fuel is spilled by a relief valve 36 into a fuel return pipe 38. The return fuel is sprayed over the evaporator 40 to extract vapor and avoid vapor lock in the fuel. (*See* col. 1, ll. 33-38). Applicant submits that Hei Ma does not teach or suggest at least the features of a fuel vaporization unit including a liquid fuel inlet in communication with a liquid fuel outlet of a fuel tank, such that the liquid fuel inlet is disposed to flow liquid fuel on the diffuser member, as recited in claim 1. Accordingly, claim 1 is patentable. Claim 2, 3 and 7 ultimately depend from claim 1, and recite the same combination of allowable features recited in claim 1 as well as additional features that define over the applied art. Applicant respectfully requests that the rejection under 35 U.S.C. § 102(b), of claims 1, 2 and 7, and the rejection under 35 U.S.C. § 103(a), of claim 3, be withdrawn.

Claims 8, 9 and 16-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hei Ma. Claims 13-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hei Ma in view of U.S. Patent No. 6,273,072 to Knapstein et al. ("Knapstein"). Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hei Ma in view of U.S. Patent No. 5,349,934 to Miyano. Applicant respectfully traverses the rejections under 35 U.S.C. § 103(a), of claims 8, 9 and 13-18. Applicant has amended claim 8 to particularly point out and distinctly claim Applicant's invention. Claim 8 recites a fuel vaporization unit, including a housing having a wall, a liquid fuel inlet port in the housing wall that receives liquid fuel from a liquid fuel tank, and a stationary diffuser member for dispersing flow of the liquid fuel from the liquid fuel inlet port.

As described above, in Hei Ma liquid fuel is supplied from a main fuel tank 20, through a supply pipe 24, to a volatilizing chamber 30 at a portion of the chamber 30 that is below an

evaporator 40. Applicant submits that Hei Ma does not teach or suggest at least the features of a stationary diffuser member for dispersing flow of liquid fuel from a liquid fuel inlet port, as recited in claim 8. Accordingly, claim 8 is patentable. Claims 9 and 13-18 ultimately depend from claim 8, and recite the same combination of allowable features recited in claim 8 as well as additional features that define over the applied art. Applicant submits that Knapstein and Miyano fail to overcome the deficiencies of Hei Ma. Applicant respectfully requests that the rejections under 35 U.S.C. § 103(a), of claims 8, 9 and 13-18, be withdrawn.

Claims 19-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hei Ma. Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hei Ma in view of Miyano. Applicant respectfully traverses the rejection under 35 U.S.C. § 102(b), of claims 19-20, and the rejection under 35 U.S.C. § 103(a), of claim 21. Applicant has amended claim 19 to particularly point out and distinctly claim Applicant's invention. Claim 19 recites a method of generating vapor fuel in a fuel vaporization unit, including flowing a liquid fuel into a chamber from a liquid fuel tank through a first inlet port in a housing wall of the chamber, and flowing the liquid fuel from the first inlet port on a stationary diffuser member.

Applicant submits that Hei Ma does not teach or suggest at least the features of flowing the liquid fuel from the first inlet port on a stationary diffuser member, as recited in claim 19. Accordingly, claim 19 is patentable. Claims 20 and 21 depend from claim 19, and recite the same combination of allowable features recited in claim 19 as well as additional features that define over the applied art. Applicant submits that Miyano fails to overcome the deficiencies of Hei Ma. Applicant respectfully requests that the rejection under 35 U.S.C. § 102(b), of claims 19-20, and the rejection under 35 U.S.C. § 103(a), of claim 21, be withdrawn.

Applicant submits that all pending claims (*i.e.* claims 1-21) are in condition for allowance.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: February 14, 2005

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